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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,819	12/12/2001	Mark A. Fanton	001663	8915

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EXAMINER

KOSLOW, CAROL M

ART UNIT	PAPER NUMBER
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1755

DATE MAILED: 04/28/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/020,819

Applicant(s)

FANTON ET AL.

Examiner

C. Melissa Koslow

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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The disclosure is objected to because of the following informalities:

The process in lines 10-19 on page 5 will not produce a ferrite since the required calcining step where the components are reacted is missing. The given process is simply mixing an iron component, a zinc component, a manganese component, a calcium component, a silicon component and a niobium component. On page 8, lines 26-27 the preferred lower amount of MnO of 37.0 to 39.0 is broader than initially taught range of 38.0 to 41.0. Appropriate correction is required.

Claim 24 is objected to because of the following informalities: "7a" should be "a".

Appropriate correction is required.

Claims 12-18, 21 and 25 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a sintered material comprising a Mn-Zn ferrite comprising as the main components, 55-58 mol% iron oxide calculated as  $\text{Fe}_2\text{O}_3$ , 38.0-41.0 mol% manganese oxide calculated as MnO and 3.3-4.7 mol% ZnO and as secondary components, 0.03-0.1 wt% CaO, 0.015-0.04 wt%  $\text{SiO}_2$  and 0.01-0.03 wt% niobium oxide calculated as  $\text{Nb}_2\text{O}_5$ , having the claimed power loss does not reasonably provide enablement for a sintered material comprising any ferrite having the claimed power loss. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

There is no guidance or teaching in the specification or art to enable one of ordinary skill in the art to choose a ferrite composition and process conditions, such as time, temperature and atmosphere, from the thousands of possible choices compositions and conditions, so as to produce the claimed material. One of ordinary skill in the art knows that both the ferrite

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composition, which includes the selection of additive components and the processing conditions both affect the power loss. Given that the composition and the processing conditions both affect the loss, one cannot predict what compositions and conditions will produce a certain loss when measured under certain conditions. Accordingly, it would require undue experimentation in order to determine what ferrite comprising material have the claimed properties, besides that taught in the specification.

Claims 3, 8, 14, 21 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 is indefinite since the claimed range is broader than the range in claim 1, from which it depends. Claim 8 is indefinite as to its meaning since it is unclear if this is the particle size of the ferrite or the particle size of the raw materials of the components. It is noted the specification teaches pulverizing the raw materials of the components to a particle size ranging from 0.9-1.9 micron. If the claimed size range is that of the raw materials, then this claim does not further limit claim 1, since the size of the raw material does not further the claimed ferrite material. Claims 14 and 21 are duplicates. Applicant is advised that should claim 14 be found allowable, claim 21 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). Claim 27 is incomplete for omitting essential steps, such omission amounting to a

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gap between the steps. See MPEP § 2172.01. The omitted steps are: converting the components into the ferrite.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 22-24 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Kurachi et al.

This reference teaches a sintered Mn-Zn ferrite having a Curie temperature of 270°C or more, preferably in the range of 290-340°C [0049]. Samples b and c in table 1 are sintered Mn-Zn ferrites having a Curie temperature above 280°C. The reference clearly teaches the claimed material.

Claims 22-24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Guillaud.

Figures 1 and 5 of this reference teach sintered Mn-Zn ferrites having a Curie temperature above 250°C, above 270°C and above 280°C. The reference clearly teaches the claimed material.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Der Zaag et al.

The reference teaches sintered ferrites having a power loss of less than  $100 \text{ mW/cm}^3$  at a frequency of 3 MHz, a magnetic flux of 100 G at a temperature range between 20-100°C. The figure shows the ferrite has the same loss pattern at both 20°C and 100°C. Thus one of ordinary skill in the art would expect it to have the same pattern in the range between 80°C to 100°C. One of ordinary skill in the art would not expect the pattern to change by increasing the temperature 40°C, absent any showing to the contrary, since it did not change over the range of 20-100°C. Thus one of ordinary skill in the art would expect the that ferrite to have a power loss of less than  $100 \text{ mW/cm}^3$  at a frequency of 3 MHz, a magnetic flux of 100 G at a temperature range between 80-140°C. This loss range overlaps the claimed ranges. Product claims with numerical ranges which overlap prior art ranges were held to have been obvious under 35 USC 103. *In re Wertheim* 191 USPQ 90 (CCPA 1976); *In re Malagari* 182 USPQ 549 (CCPA 1974); *In re Fields* 134 USPQ 242 (CCPA 1962); *In re Nehrenberg* 126 USPQ 383 (CCPA 1960). The reference suggests the claimed ferrite.

Claims 1-7, 9-11, 19, 20, 22-24 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 6-325920.

This reference teaches a ferrite consisting essentially of a main component of 30-42 mol% MnO, 4-19 mol% ZnO, the remainder  $\text{Fe}_2\text{O}_3$ , which is 39-66 mol%; and as secondary components, less than 1 wt% CaO, less than 1 wt%  $\text{SiO}_2$  and less than 0.8 wt%  $\text{Nb}_2\text{O}_5$ . The

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taught amounts overlap the claimed amounts. Accordingly, one of ordinary skill in the art would expect the taught ferrite to have a Curie temperature range that overlaps the claimed ranges. The taught ferrite is used as the core for transformers for power systems. Thus the reference teaches the claimed core and power supply. The taught ferrite is produced by mixing of 30-42 mol% MnO, 4-19 mol% ZnO, 39-66 mol% Fe<sub>2</sub>O<sub>3</sub>, less than 1 wt% CaO, less than 1 wt% SiO<sub>2</sub> and less than 0.8 wt% Nb<sub>2</sub>O<sub>5</sub>, pressing the mixture into the desired shape, which encompassing pressing it to a predetermined density and sintering the shaped material. The reference teaches the claimed material, core, power supply and processes.

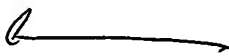
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (703) 308-3817. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell, can be reached at (703) 308-3823.

The fax number for Amendments filed under 37 CFR 1.116 or After Final communications is (703) 872-9311. The fax number for all other official communications is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661 or (703) 308-0662.

cmk  
April 28, 2003

  
C. Melissa Koslow  
Primary Examiner  
Tech. Center 1700